Technical Data Consolidation

Towards a Navy Integrated Data Environment

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Data
Information
Knowledge

Where does Data fit?

- Data consists of instances of numbers, text, graphics, etc.
  - Can be unique; very often duplicated
- Information is Data aggregated in meaningful collections.
- Knowledge is Information transformed by relationships.

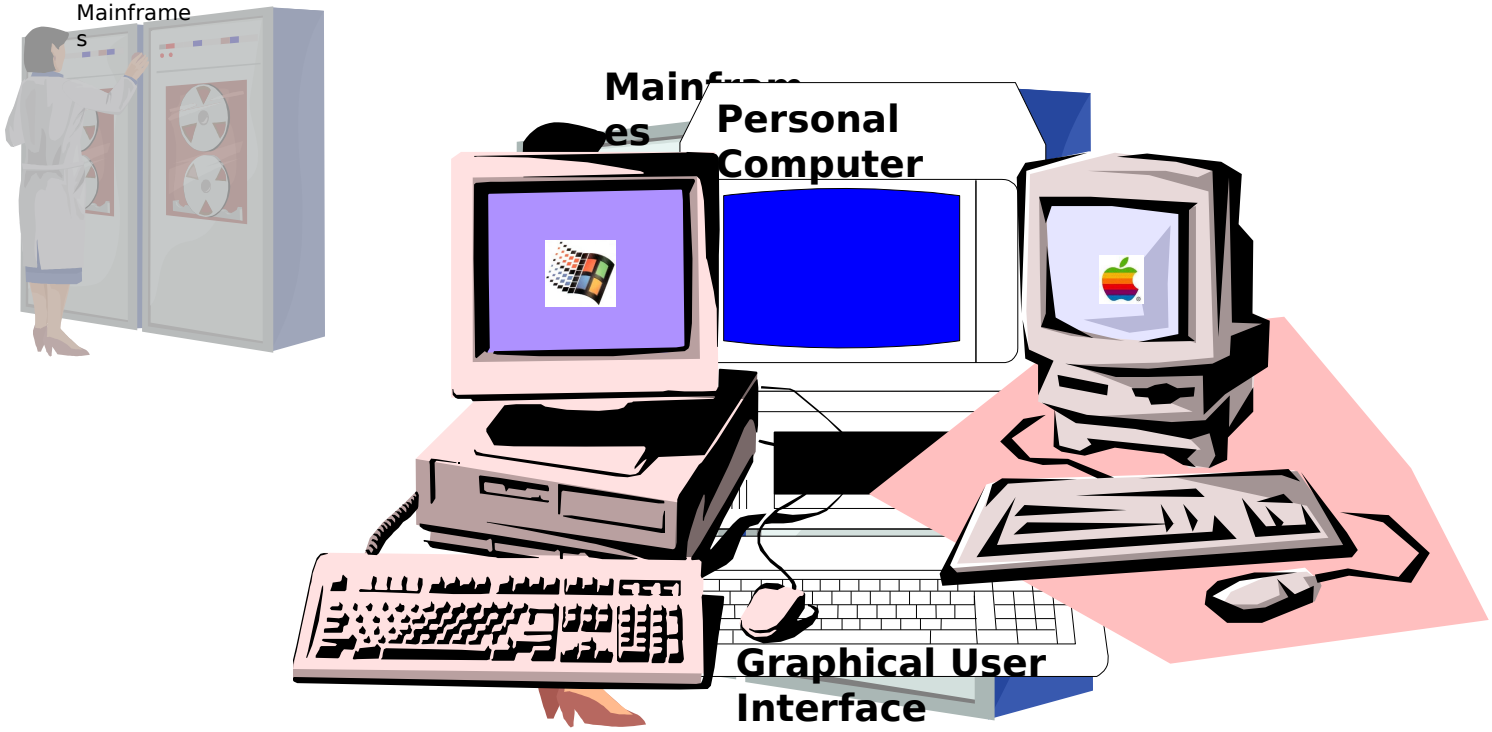
Data Valuation Efforts

- Cataloging and Indexing.
- Recognizing Technical Authority.
  - Sole Source
- Conversion from Physical to Electronic Media.
- Adoption of Knowledge Management Techniques.

The Data, Information and Knowledge Infrastructure

- Examine the foundations of Data processing.
- Investigate the primary assumptions of Information Technologies.
- Plan the Architectures for a Knowledge-Centric Organization.

The Growth of the Data Infrastructure



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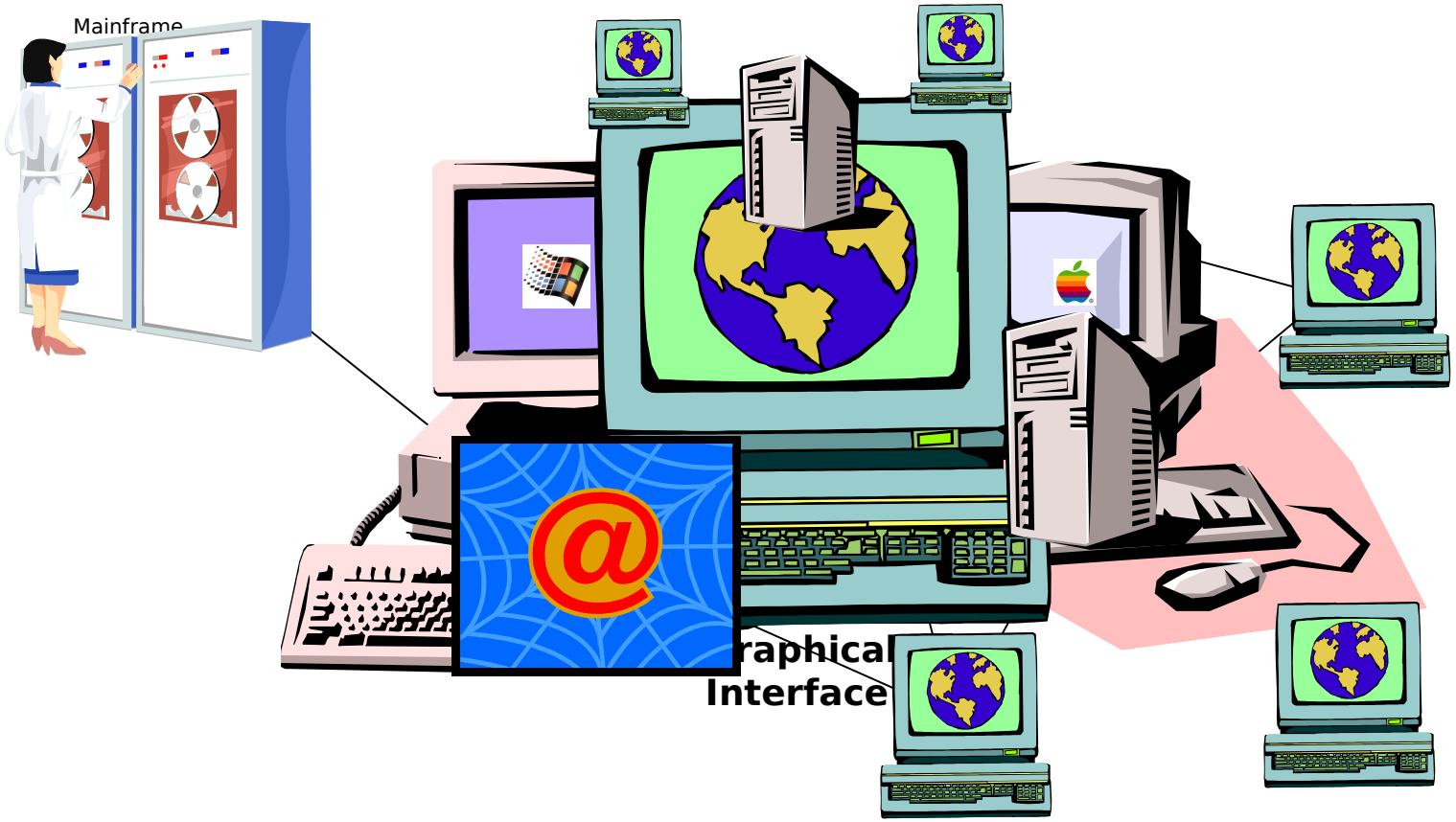


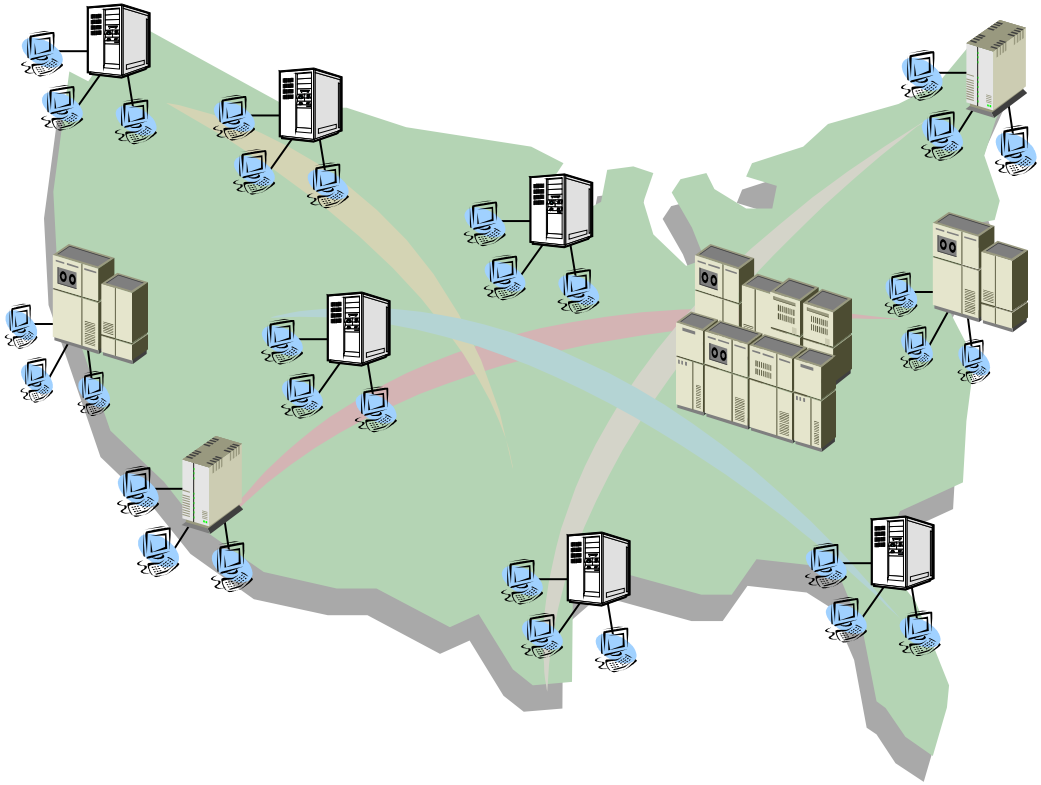
The Current World-view

- Adoption of client-server (and later peer-peer) concepts:
  - Developers provide users with virtually unlimited data.
- The computer becomes more than a static processing device; it becomes a gateway to content and applications.

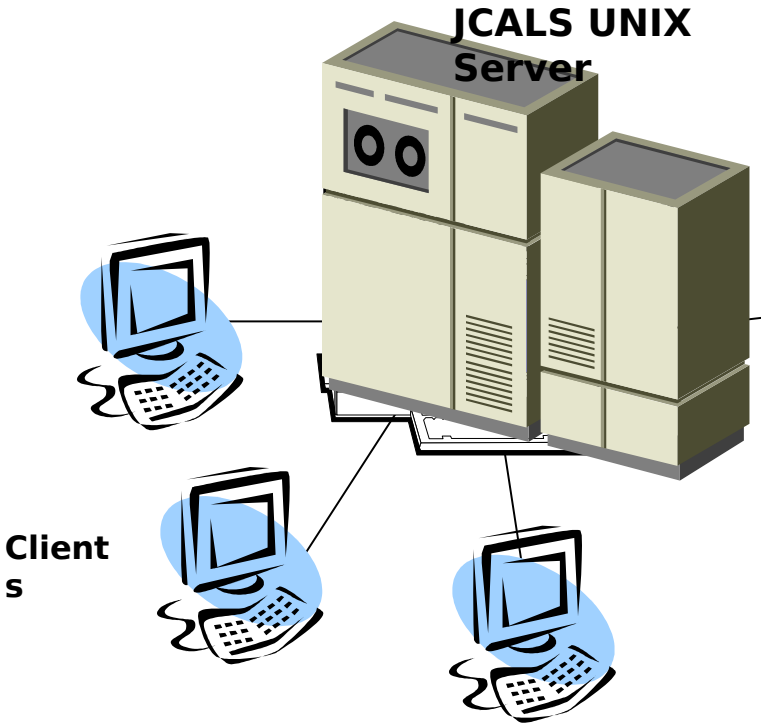
The State of the System

- The Navy user has access to various systems including JCALS.
  - All of these systems are nominally grouped according to business process
- NMCI Infrastructure will provide common integration backbone.
- Aggregation (i.e. Distance Support Portal): initial step towards Web Enablement.
  - Task Force Web will incorporate Integrated Data Transfer (XML structures and namespaces)

The JCALS Infrastructure



Updated JCALS Implementation



- PC Clients operate using the “Fat Client”
- Higher Overhead on Network
- “Thin Client” now predominates
- Uses Web Interface
- Administration workload decreases; Network Overhead diminished

JCALS Enterprise Application

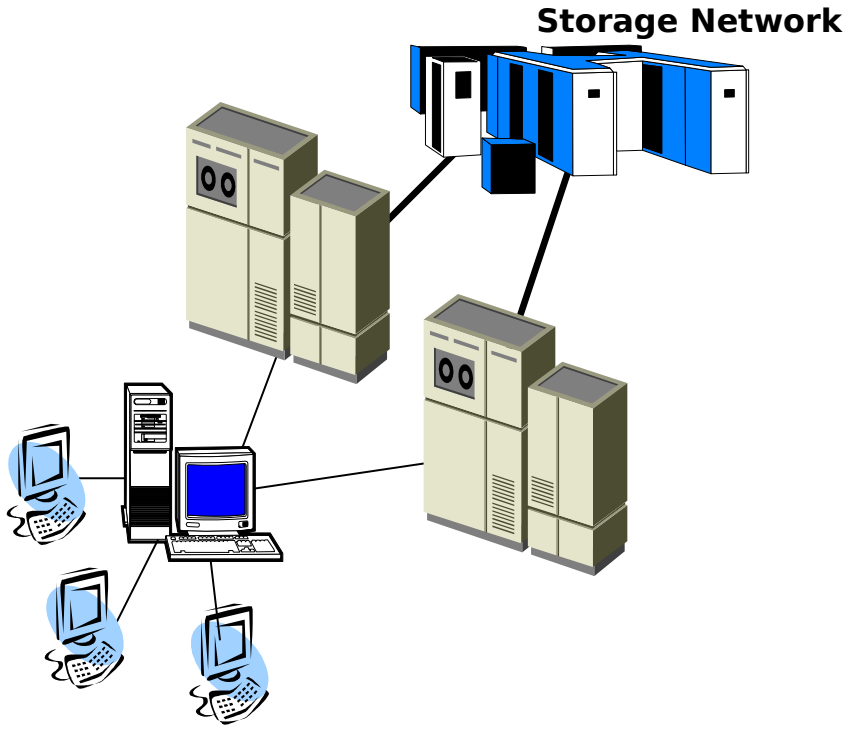
- Navy implementation integrates the capabilities of Content Management.
  - Whole Documents and components
  - Metadata used to describe core content
    - Describes applicability of documents and components, associated parts information, etc.
- Enterprise Application also Provides Distribution for Content through publication sub-system and Web Conduit.

Achieving Open Integration

- Navy JCALS acts as an integration platform for COTS tools:
  - Content Management, Composition Engine, Web Services and Uniform Database implementation to manage Workflow and Folders
  - Integration achievable due to open interface standards
- Success of the application requires additional resources.
  - Storage Issues

Growing Capabilities

- The growth of managed data within Navy JCALS sites requires additional storage capabilities:
  - Storage Area Networks provide safer, unified management of storage resources
  - Can be shared among site servers

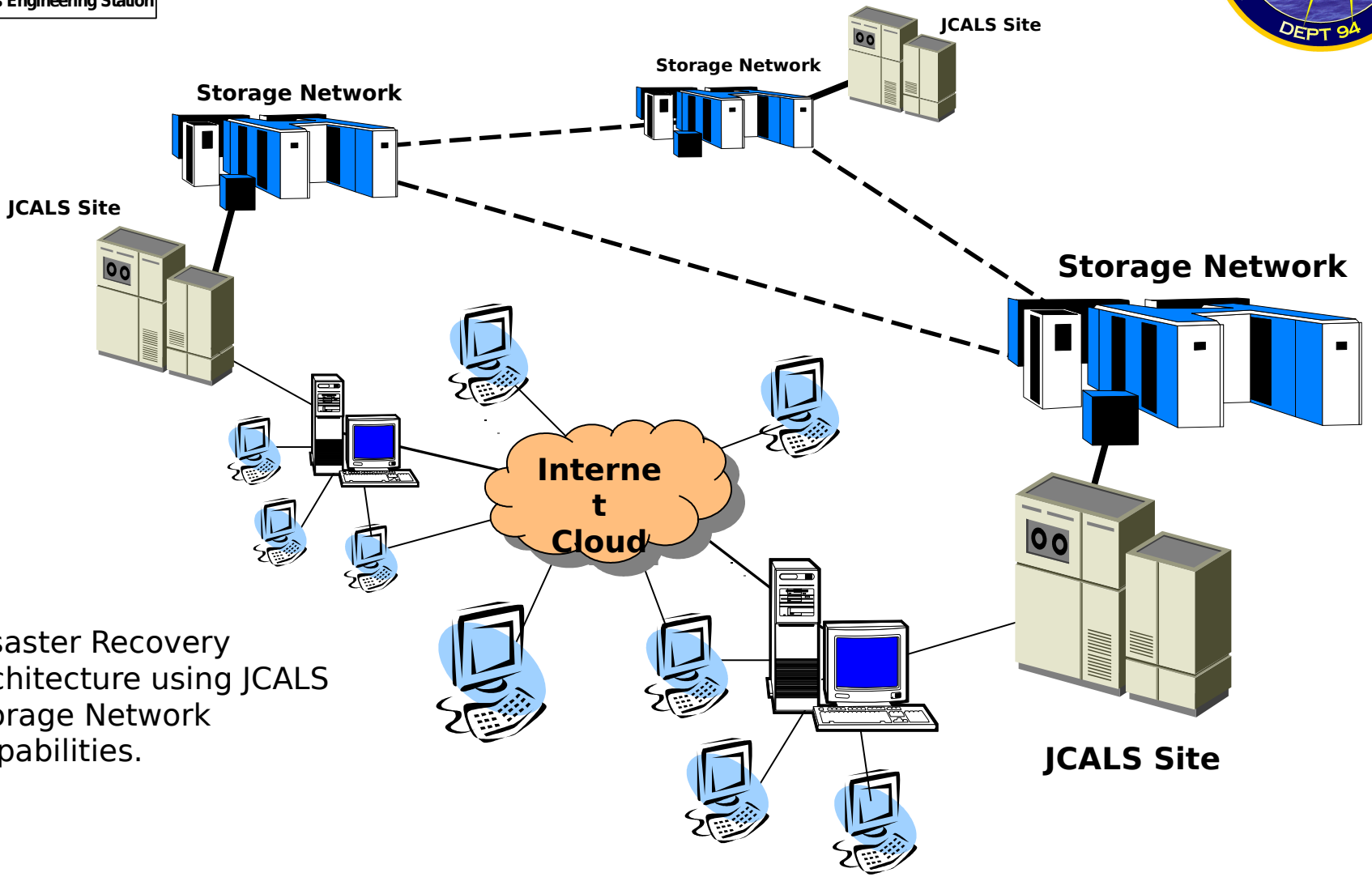


Storage Area Networks

- Self Contained Solution.
  - Independent service that connects via Fibre, SCSI or TCP/IP networking
  - Based on a pool of storage devices that can be dynamically re-allocated
  - Offer self-contained backup capabilities through Mirrors (local and remote)
  - Key building block of Disaster Recovery Architecture

Disaster Recovery

- Consists of two key components:
  - Data assurance
  - Application availability
- WAN connects Storage Devices for long-distance backup of separate sites.
- Expanding Site capabilities to use remote site data (including User Account Information) to stand up remote applications.
  - Capabilities to remain in effect until other site returns to service

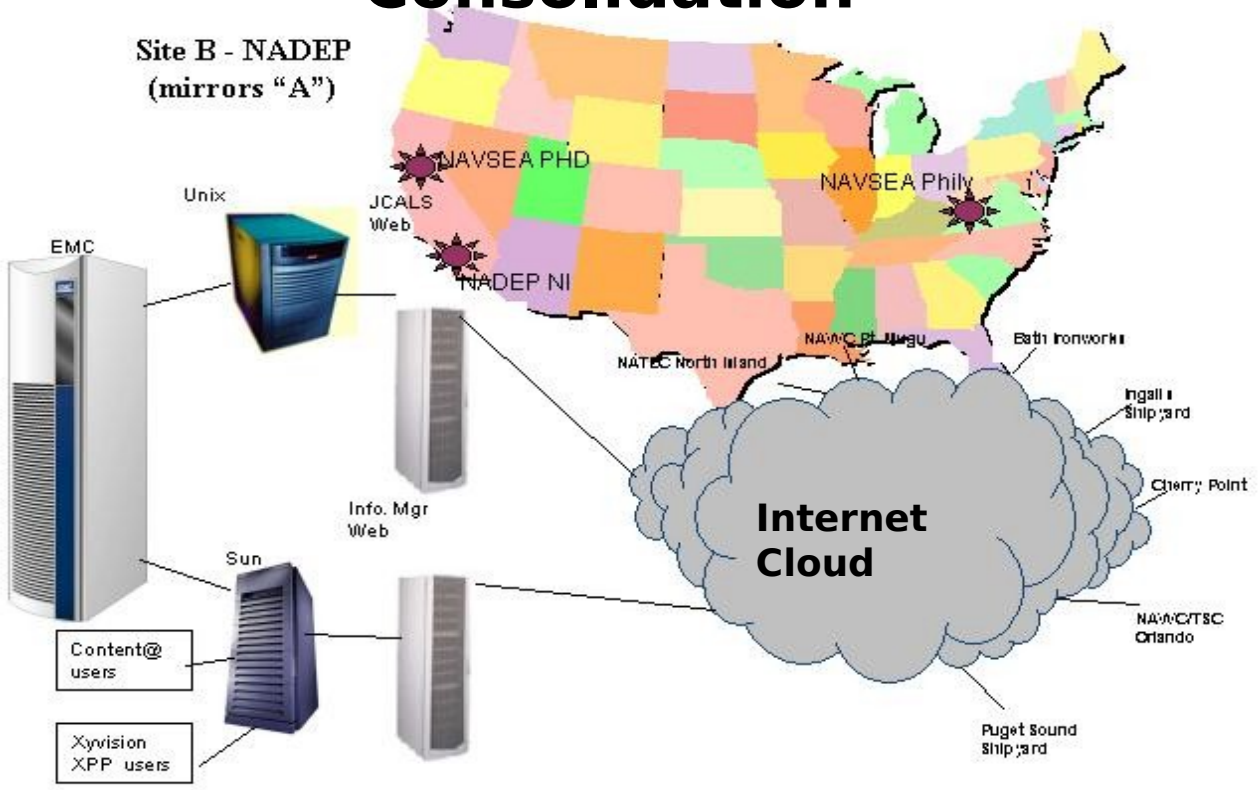


Disaster Recovery Architecture using JCALS Storage Network Capabilities.

The Consolidation Solution

- Servers at Primary Sites are capable of providing JCALS data and application for large number of users.
- Data is secure on-site and through remote storage locations.
- JCALS Web Applications now primary gateway.
- Local Administration Costs decrease.
- NMCI provides safe, secure Internet conduit.

Proposed Navy Technical Data Repository Consolidation



From Web Enabling Navy Logistics Integration Plan, June 2001

Technical Data Repository Consolidation

- Initial Proposal includes:
  - NAVSEA Philadelphia (HM&E Data)
  - NAVSEA Port Hueneme (Combat Systems Data)
  - NADEP North Island (Aircraft Data)
- Coordination with NMCI and ERP efforts.
- Reduces Hardware and Software Maintenance Costs, Improves Resource Management, allows data access via Web Browser.
- Aligned with Task Force Web Vision.

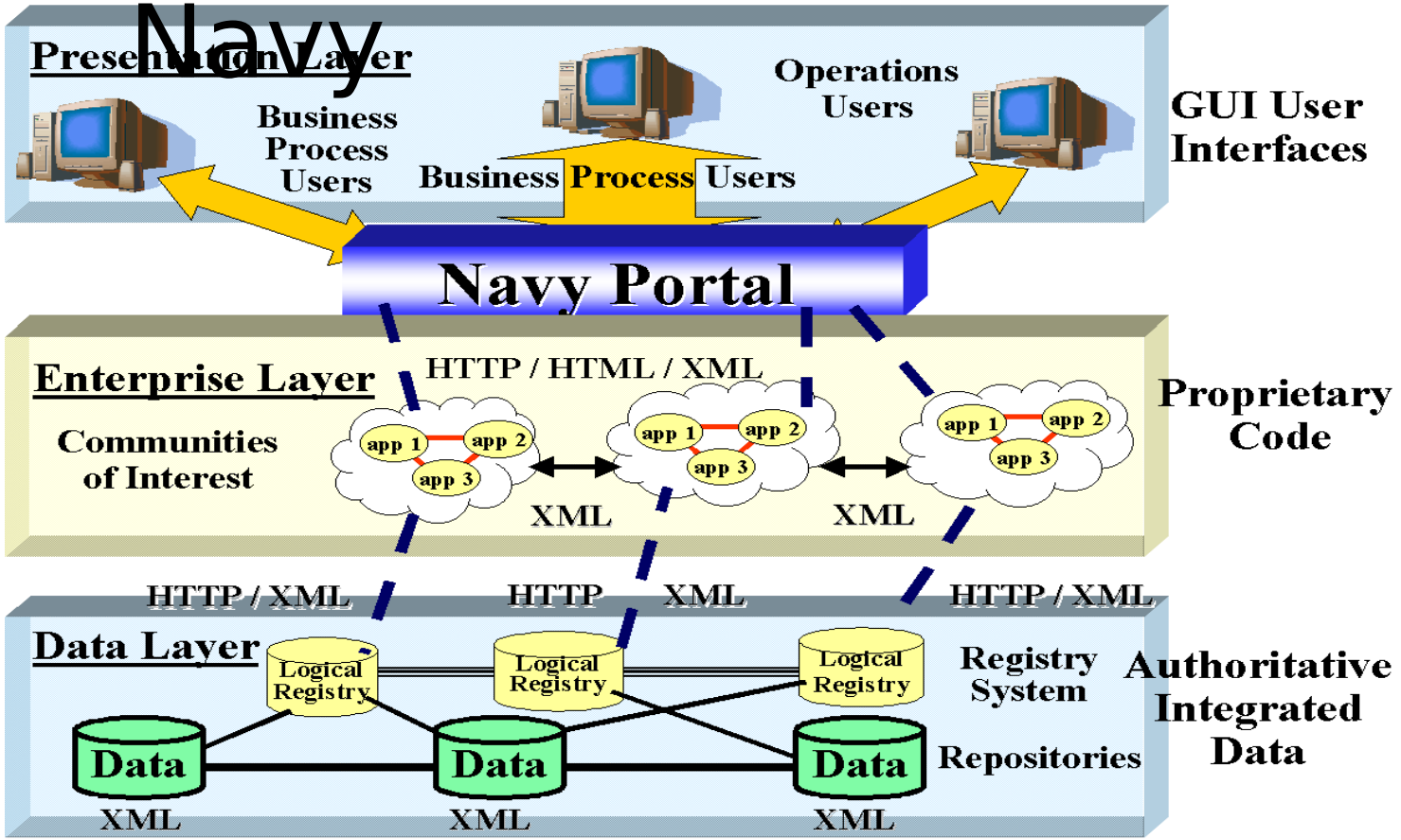
Task Force Web

- Key to Web-enabled Navy.
  - Consistent “look and feel”
- Consolidation of various Web-based Applications under a unified Portal.
- Dependent on XML for data transfer.
  - Requires common XML structures and schemas
- Initial applications to be rolled out in November 2001.
- All Navy applications to be Web-enabled by 2004.

Tech Data Web Enablement

- Adopt XML strategies that encompass technical data architectures.
  - PDML (Product Data Markup Language)
- Use existing metadata attributes to extend XML tagsets.
- Integrate technical data with other XML/Web enabled information.
  - Link with live Product Data from Manufacturers, NAVSUP
  - Enterprise Resource Planning

The Web-Enabled Navy



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Conclusions

- Consolidation offers distinct Advantages.
  - Application and Data Assurance
  - Reduced Administration Costs
- Single Web Portal access to universal data.
- Integration with ongoing Initiatives.
  - Task Force Web
  - ERP
  - NMCI
- Provides the right Data at the right Time.

Back-Up Slides

Knowledge Management?*

- A process for optimizing the effective application of intellectual capital to achieve organizational objectives.
- Benefits:
  - Improving organization performance through increased effectiveness, productivity, quality and innovation.
  - Increasing the financial value of the organization by treating people's knowledge as an asset similar to traditional assets like inventory and capital facilities.

* Metrics Guide for Knowledge Management Initiatives; DONCIO AUGUST 2001.

Understanding KM

- Ongoing KM initiatives seek to tie discrete data with meaningful insight from users.
- Current planning requires a serious comprehension of Data access, storage and manipulation.
- The study of the growth of Information Services provides some guidance in how KM can be implemented.

KNOWING is seeing beyond images; hearing beyond words, and sensing beyond appearances.

So it is said that if you know others and know yourself, you will not be imperiled in a hundred battles; if you do not know others but know yourself, you win one and lose one; if you do not know others and do not know yourself, you will be imperiled in every single battle.

– Sun Tzu, The Art of War